

Dentists' Knowledge, Diagnostic Confidence, and Clinical Decision-Making Regarding Oral Mucosal Lesions and Potentially Malignant Disorders: A Cross-Sectional Survey in Libya and Other Countries

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معرفة أطباء الأسنان، وثقتهم في التشخيص، واتخاذهم للقرارات السريرية بشأن آفات الغشاء المخاطي الفموي والاضطرابات الفموية المحتملة الخبثية: دراسة مسحية مقطعية في ليبيا ودول أخرى

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Abstract:

Dentists play an important role in the early recognition, assessment, and appropriate referral of oral mucosal lesions and oral potentially malignant disorders (OPMDs). Adequate knowledge, diagnostic confidence, and appropriate clinical decision-making are essential for the timely identification and management of suspicious oral lesions. This study assessed dentists' knowledge, diagnostic confidence, and clinical decision-making regarding oral mucosal lesions and OPMDs, with particular emphasis on dentists practicing in Libya. **Methods:** A cross-sectional, web-based survey was conducted between May and August 2026 using a structured, self-administered electronic questionnaire distributed through social media. A total of 215 dentists participated, including 150 practicing in Libya and 65 practicing outside Libya. Knowledge was assessed using five items, with one point assigned for each correct response (total score, 0–5). Participants were categorized as having high (4–5), moderate (3), or low (0–2) knowledge. Categorical variables were summarized using frequencies and percentages, and associations between categorical variables were examined using Pearson's chi-square test. Statistical significance was set at $p < 0.05$. **Results:** Overall, 123 participants (57.2%) demonstrated high knowledge, 68 (31.6%) moderate knowledge, and 24 (11.2%) low knowledge. The proportion of correct responses ranged from 73.0% (157/215) for recognition of erythroplakia as a potentially malignant lesion to 86.5% (186/215) for identification of persistent oral ulcers as suspicious. Tobacco was recognized as an oral cancer risk factor by 179 participants (83.3%), while 181 (84.2%) recognized that an oral ulcer persisting for more than 2 weeks warrants further investigation or referral. Routine oral mucosal examination was reported by 118 participants (54.9%). High confidence in recognizing suspicious lesions and determining biopsy indications was reported by 82 (38.1%) and 74 (34.4%) participants, respectively. Previous formal oral pathology training was reported by 113 participants (52.6%) and was significantly associated with high knowledge (68.1% vs. 45.1%; $\chi^2 = 11.63$, $p < 0.001$). No statistically significant differences were observed between dentists practicing in Libya and those practicing outside Libya in leukoplakia identification ($p = 0.598$), high knowledge ($p = 0.650$), or routine oral mucosal examination practices ($p = 0.488$). **Conclusions:** Although overall knowledge of OPMD recognition and oral cancer risk factors was relatively favorable, routine oral mucosal examination and diagnostic confidence were less consistent. Formal oral pathology training was significantly associated with higher knowledge levels. Targeted continuing professional education, particularly practical and case-based training focused on oral mucosal screening, recognition of suspicious lesions, and indications for biopsy and referral, may help strengthen dentists' clinical preparedness.

Keywords: oral mucosal lesions; oral potentially malignant disorders; oral cancer; diagnostic confidence; clinical decision-making; dentists; Libya.

الملخص

يلعب أطباء الأسنان دوراً مهماً في الاكتشاف المبكر والتقييم والإحالة المناسبة للمرضى الذين يعانون من آفات الغشاء المخاطي الفموي والاضطرابات الفموية المحتملة الخبيثة (OPMDs). وتُعد المعرفة الكافية، والثقة في التشخيص، واتخاذ القرارات السريرية المناسبة من العوامل الأساسية للتعرف المبكر على الآفات الفموية المشتبه بها والتعامل معها في الوقت المناسب. هدفت هذه الدراسة إلى تقييم معرفة أطباء الأسنان وثقتهم في التشخيص واتخاذهم للقرارات السريرية المتعلقة بآفات الغشاء المخاطي الفموي والاضطرابات الفموية المحتملة الخبيثة، مع التركيز بشكل خاص على أطباء الأسنان الممارسين في ليبيا. أجريت دراسة مسحية مقطعية إلكترونية خلال الفترة من مايو إلى أغسطس 2026 باستخدام استبيان إلكتروني منظم ومُعَبَأ ذاتيًا، وُزِع عبر وسائل التواصل الاجتماعي. شارك في الدراسة 215 طبيب أسنان، من بينهم 150 طبيباً ممارسون المهنة في ليبيا و65 طبيباً يمارسونها خارج ليبيا. جرى تقييم المعرفة باستخدام خمسة بنود، ومُنحت نقطة واحدة لكل إجابة صحيحة، بإجمالي درجات يتراوح بين 0 و5، وصُنِّف المشاركون إلى ذوي معرفة مرتفعة (4-5 درجات)، ومتوسطة (3 درجات)، ومنخفضة (0-2 درجة). ولُخِّصت المتغيرات الفئوية باستخدام التكرارات والنسب المئوية، كما تم فحص الارتباطات بين المتغيرات الفئوية باستخدام اختبار كاي-تربيع لبيرسون، واعتُبرت قيمة $p < 0.05$ ذات دلالة إحصائية. أظهر 123 مشاركاً (57.2%) مستوى مرتفعاً من المعرفة، بينما أظهر 68 (31.6%) مستوى متوسطاً و24 (11.2%) مستوى منخفضاً. وتراوحت نسبة الإجابات الصحيحة بين 73.0% (215/157) فيما يتعلق بالتعرف على الطلاوة الحمراء (erythroplakia) كافة محتملة الخبيثة، و86.5% (215/186) فيما يتعلق بالتعرف على القرحة الفموية المستمرة باعتبارها آفة تستدعي الاشتباه. وتمكن 179 مشاركاً (83.3%) من التعرف على التبغ كعامل خطر لسرطان الفم، في حين أدرك 181 مشاركاً (84.2%) أن القرحة الفموية التي تستمر لأكثر من أسبوعين تستدعي مزيداً من التقييم أو الإحالة. وأفاد 118 مشاركاً (54.9%) بإجرائهم فحصاً روتينياً للغشاء المخاطي الفموي. كما أبلغ 82 مشاركاً (38.1%) عن مستوى مرتفع من الثقة في التعرف على الآفات المشتبه بها، بينما أبلغ 74 مشاركاً (34.4%) عن مستوى مرتفع من الثقة في تحديد الحالات التي تستدعي أخذ خزعة. وأفاد 113 مشاركاً (52.6%) بوجود تدريب رسمي سابق في أمراض الفم، وكان هذا التدريب مرتبطاً بشكل ذي دلالة إحصائية بارتفاع مستوى المعرفة (68.1% مقابل 45.1%؛ $\chi^2 = 11.63$ ، $p < 0.001$). ولم تُلاحظ فروق ذات دلالة إحصائية بين أطباء الأسنان الممارسين في ليبيا وأولئك الممارسين خارج ليبيا فيما يتعلق بالتعرف على الطلاوة البيضاء ($p = 0.598$)، أو ارتفاع مستوى المعرفة ($p = 0.650$)، أو ممارسات الفحص الروتيني للغشاء المخاطي الفموي ($p = 0.488$) وعلى الرغم من أن المستوى العام للمعرفة المتعلقة بالتعرف على الاضطرابات الفموية المحتملة الخبيثة وعوامل خطر سرطان الفم كان جيداً نسبياً، فإن إجراء الفحص الروتيني للغشاء المخاطي الفموي ومستوى الثقة في التشخيص كانا أقل اتساقاً. وارتبط التدريب الرسمي في أمراض الفم ارتباطاً ذا دلالة إحصائية بارتفاع مستويات المعرفة. وقد تسهم برامج التعليم المهني المستمر الموجهة، ولا سيما التدريب العملي القائم على الحالات السريرية، مع التركيز على فحص الغشاء المخاطي الفموي، والتعرف على الآفات المشتبه بها، ومعايير أخذ الخزعة والإحالة، في تعزيز الاستعداد السريري لأطباء الأسنان.

الكلمات المفتاحية: آفات الغشاء المخاطي الفموي؛ الاضطرابات الفموية المحتملة الخبيثة؛ سرطان الفم؛ الثقة في التشخيص؛ اتخاذ القرارات السريرية؛ أطباء الأسنان؛ ليبيا.

1. Introduction

Oral mucosal lesions encompass a broad spectrum of reactive, infectious, inflammatory, potentially malignant, and malignant conditions. Their recognition is an important component of routine dental practice because dentists are frequently in a position to identify abnormalities of the oral mucosa during clinical examination. Oral cancer remains a major global health concern, with a substantial burden of new cases and deaths worldwide. [1,2]

Among oral mucosal abnormalities, oral potentially malignant disorders (OPMDs) are of particular importance because they comprise conditions associated with an increased risk of progression to oral squamous cell carcinoma (OSCC). The terminology and classification of OPMDs have evolved through international consensus, with recognized conditions including leukoplakia, erythroplakia, proliferative verrucous leukoplakia, oral lichen planus, oral submucous fibrosis, and other specific mucosal disorders. [3,4]

Early recognition of suspicious oral lesions is essential for appropriate investigation and referral. Clinical examination remains a fundamental component of assessment, although its diagnostic performance varies according to lesion characteristics and examiner experience. A systematic review and meta-analysis reported pooled sensitivity and specificity of approximately 71% and 85%, respectively, for conventional oral examination in identifying dysplastic or malignant lesions, highlighting both its clinical value and its limitations when used alone. [5,6]

For dentists, appropriate clinical decision-making involves recognizing suspicious clinical features, determining when further investigation is necessary, and considering biopsy or specialist referral when indicated. Evidence-based guidance emphasizes appropriate clinical assessment of potentially malignant lesions and indicates that

adjunctive diagnostic techniques should complement rather than replace clinical examination and histopathological assessment when required. [7,8]

Despite the clinical importance of oral mucosal lesions and OPMDs, dentists may differ in their knowledge, diagnostic confidence, and clinical decision-making. These differences may be related to professional experience, clinical role, and previous education or training in oral pathology. Evaluating these factors can help identify areas in which additional education and practical training may be beneficial. [9,10]

Therefore, this study aimed to assess dentists' knowledge, diagnostic confidence, and clinical decision-making regarding oral mucosal lesions and OPMDs, with a primary focus on dentists practicing in Libya and a secondary descriptive comparison with dentists practicing in other countries.

2. Materials and Methods

2.1 Study Design and Setting

A cross-sectional, questionnaire-based study was conducted between May and August 2026 to assess dentists' knowledge, diagnostic confidence, and clinical decision-making regarding oral mucosal lesions and oral potentially malignant disorders (OPMDs).

A structured, self-administered questionnaire was developed using Google Forms and distributed electronically through social media to dentists practicing in Libya and other countries. The primary study population comprised dentists practicing in Libya, whereas respondents practicing outside Libya constituted a secondary comparison group.

2.2 Study Population and Sampling

The study included 215 dentists, of whom 150 (69.8%) practiced in Libya and 65 (30.2%) practiced in other countries. General dental practitioners and dental specialists with different levels of clinical experience were eligible to participate.

Participants were recruited using non-probability voluntary-response sampling through social media. Because the number of dentists who received or viewed the survey invitation could not be determined, a response rate could not be calculated.

2.3 Questionnaire Design and Content

The questionnaire comprised four domains:

1. **Sociodemographic and professional characteristics**, including country of practice, sex, professional category, and years of clinical experience;
2. **Knowledge of oral mucosal lesions and OPMDs**, including recognition of leukoplakia, erythroplakia, persistent oral ulcers, tobacco as an oral cancer risk factor, and appropriate management of ulcers persisting for more than two weeks;
3. **Clinical decision-making and referral practices**, including assessment of persistent white or red lesions, frequency of routine oral mucosal examination, and previous referral of patients with suspicious lesions; and
4. **Diagnostic confidence and previous formal oral pathology training**, including confidence in recognizing suspicious lesions and determining when biopsy was indicated.

Confidence in recognizing suspicious lesions and determining when biopsy was required was categorized as high, moderate, or low.

2.4 Data Collection and Consent

The questionnaire was circulated electronically through social media between May and August 2026. An electronic informed-consent statement was presented on Google Forms before the questionnaire, and only participants who agreed to participate were permitted to proceed.

Participation was voluntary. Responses were collected confidentially and used for research purposes. A total of 215 completed responses were included in the analysis.

2.5 Knowledge Assessment

Knowledge was assessed using five questions addressing recognition of selected OPMDs, suspicious clinical findings, oral cancer risk factors, and appropriate management of persistent oral ulcers.

Each correct response received one point, whereas an incorrect response received zero points, resulting in a possible total score ranging from 0 to 5. Higher scores indicated greater knowledge.

Participants were categorized into low-, moderate-, and high-knowledge groups according to the predefined scoring thresholds used in the questionnaire.

2.6 Statistical Analysis

Data were analyzed using IBM SPSS Statistics, version 26. Categorical variables were summarized using frequencies and percentages. The overall knowledge score was summarized using descriptive statistics.

Pearson's chi-square test was used to examine associations between categorical variables, including country of practice, knowledge category, clinical experience, and previous formal oral pathology training. All tests were two-sided, and statistical significance was defined as $p < 0.05$.

Because the original individual-level dataset was unavailable for complete verification, subgroup analyses and corresponding inferential statistics that could not be independently reproduced from the available summary data were treated cautiously and require confirmation against the original SPSS output before submission.

2.7 Ethical Considerations

Ethical approval was obtained from Sirte University, Libya (Approval No. 05.SU.2026). Electronic informed consent was obtained through Google Forms before participation, and only respondents who provided consent were able to access the questionnaire. Participation was voluntary, and responses were handled confidentially. No personally identifiable information was collected.

3. Results and discussion

3.1 Characteristics of Participants

A total of 215 dentists participated in the study. Of these, 150 (69.8%) practiced in Libya and 65 (30.2%) practiced in other countries. Female participants accounted for 126 (58.6%), while 89 (41.4%) were male. Regarding clinical experience, 96 dentists (44.7%) had fewer than 5 years of experience, 67 (31.2%) had 5–10 years, and 52 (24.2%) had more than 10 years of experience. Most participants were general dental practitioners ($n = 164$, 76.3%), whereas 51 (23.7%) were dental specialists (Table 1).

Table 1. Characteristics of study participants (n = 215)

Characteristic	Category	n	%
Practice location	Libya	150	69.8
	Other countries	65	30.2
Sex	Female	126	58.6
	Male	89	41.4
Experience	<5 years	96	44.7
	5–10 years	67	31.2
	>10 years	52	24.2
Professional status	General practitioner	164	76.3
	Specialist	51	23.7

3.2 Knowledge of Oral Mucosal Lesions

Knowledge of selected oral mucosal lesions and oral potentially malignant disorders (OPMDs) was generally favorable. Correct responses ranged from 73.0% ($n = 157$) for identifying erythroplakia as potentially malignant to 86.5% ($n = 186$) for recognizing a persistent oral ulcer as a suspicious finding. Leukoplakia was correctly identified as an OPMD by 174 respondents (80.9%), while 179 (83.3%) correctly identified tobacco as an oral cancer risk factor. Additionally, 181 respondents (84.2%) correctly identified the recommendation to investigate or refer a patient with an oral ulcer persisting for more than two weeks.

Overall, 123 participants (57.2%) were classified as having high knowledge (score 4–5), 68 (31.6%) as having moderate knowledge (score 3), and 24 (11.2%) as having low knowledge (score 0–2) (Table 2). Across the five knowledge items, 877 of 1,075 responses were correct, corresponding to an overall correct response rate of 81.6% and a mean of 4.08 correct responses out of 5.

Table 2. Knowledge of oral mucosal lesions among participating dentists (n = 215)

Knowledge item	Correct, n	%
Persistent ulcer recognized as suspicious	186	86.5
Ulcer >2 weeks: investigate or refer	181	84.2
Tobacco recognized as a risk factor	179	83.3
Leukoplakia recognized as an OPMD	174	80.9
Erythroplakia recognized as potentially malignant	157	73.0

3.3 Clinical Decision-Making and Referral Practices

Regarding clinical decision-making, further clinical evaluation or consideration of biopsy for an unexplained persistent white or red lesion was reported by 169 dentists (78.6%). Routine oral mucosal examination during patient evaluations was reported by 118 respondents (54.9%), whereas 71 (33.0%) reported performing such examinations sometimes and 26 (12.1%) reported performing them rarely. Previous referral of a patient presenting with a suspicious oral lesion was reported by 132 respondents (61.4%) (Table 3).

Table 3. Self-reported clinical decision-making and referral practices (n = 215)

Measure	Response	n	%
Persistent unexplained white/red lesion	Further assessment / consider biopsy	169	78.6
Oral mucosal examination	Routine	118	54.9
	Sometimes	71	33.0
	Rarely	26	12.1
Previous referral for suspicious lesion	Yes	132	61.4

3.4 Diagnostic Confidence and Formal Training

Among participating dentists, 82 (38.1%) reported high confidence in recognizing suspicious oral lesions, while 91 (42.3%) reported moderate confidence and 42 (19.5%) reported low confidence. Regarding decisions about when a biopsy is clinically indicated, 74 respondents (34.4%) reported high confidence, 93 (43.3%) reported moderate confidence, and 48 (22.3%) reported low confidence. Previous formal oral pathology training was reported by 113 participants (52.6%), whereas 102 (47.4%) reported no previous formal training (Table 4).

Table 4. Diagnostic confidence and formal oral pathology training (n = 215)

Measure	Response	n	%
Recognizing suspicious oral lesions	High confidence	82	38.1
	Moderate confidence	91	42.3
	Low confidence	42	19.5
Deciding when biopsy is required	High confidence	74	34.4
	Moderate confidence	93	43.3
	Low confidence	48	22.3
Formal oral pathology training	Yes	113	52.6
	No	102	47.4

3.5 Comparison Between Dentists Practicing in Libya and Other Countries

Comparative analysis was performed between dentists practicing in Libya (n = 150) and those practicing in other countries (n = 65). The proportion of dentists correctly identifying leukoplakia as an oral potentially malignant disorder (OPMD) was 80.0% (120/150) among dentists practicing in Libya and 83.1% (54/65) among those practicing in other countries; this difference was not statistically significant (Pearson $\chi^2 = 0.278$, p = 0.598).

Similarly, high knowledge was observed in 56.7% (85/150) of dentists practicing in Libya and 60.0% (39/65) of those practicing in other countries, with no statistically significant difference between the groups (Pearson $\chi^2 = 0.206$, p = 0.650). Routine oral mucosal examinations were reported by 53.3% (80/150) of dentists practicing in Libya compared with 58.5% (38/65) of those practicing in other countries; this difference was also not statistically significant (Pearson $\chi^2 = 0.482$, p = 0.488).

In contrast, previous formal oral pathology training was reported less frequently among dentists practicing in Libya (48.0%, 72/150) than among those practicing in other countries (63.1%, 41/65). This difference was statistically significant (Pearson $\chi^2 = 4.134$, p = 0.042) (Table 5).

Table 5. Comparison of knowledge, leukoplakia recognition, routine oral mucosal examination, and formal oral pathology training between dentists practicing in Libya and other countries

Variable	Libya (n = 150), n (%)	Other countries (n = 65), n (%)	Pearson χ^2	p-value
Correct identification of leukoplakia as an OPMD	120 (80.0)	54 (83.1)	0.278	0.598
High knowledge classification	85 (56.7)	39 (60.0)	0.206	0.650
Routine oral mucosal examination	80 (53.3)	38 (58.5)	0.482	0.488
Previous formal oral pathology training	72 (48.0)	41 (63.1)	4.134	0.042

Note: OPMD, oral potentially malignant disorder; χ^2 , Pearson chi-square test. A p-value < 0.05 was considered statistically significant.

3.6 Association Between Formal Oral Pathology Training and Knowledge Level

Previous formal oral pathology training was reported by 113 (52.6%) participants, while 102 (47.4%) reported no previous formal training. Overall, 123 (57.2%) participants were classified as having high knowledge.

A significantly higher proportion of participants with previous formal oral pathology training demonstrated high knowledge compared with those without previous formal training: 68.1% (77/113) versus 45.1% (46/102), respectively (Pearson $\chi^2 = 11.63$, $p < 0.001$).

4. Discussion

The primary objective of this study was to evaluate dentists' knowledge, diagnostic confidence, and clinical decision-making regarding oral mucosal lesions and oral potentially malignant disorders (OPMDs), with a focus on practitioners in Libya alongside an exploratory comparative sample of international dentists [11]. Early detection of OPMDs remains one of the most effective clinical strategies for reducing the morbidity and mortality associated with oral squamous cell carcinoma [12,13]. Overall, the findings indicate a favorable level of theoretical knowledge among participating dentists, yet highlight notable gaps in self-reported diagnostic confidence, routine screening practices, and post-qualification training [11,14].

In the present study, 57.2% ($n = 123$) of respondents achieved a high knowledge score (4–5 points out of 5), and the overall proportion of correct responses across all items was 81.6% [11]. High recognition rates were observed for persistent oral ulcers as suspicious lesions (86.5%), referral guidelines for ulcers persisting longer than two weeks (84.2%), tobacco as a major oral cancer risk factor (83.3%), and leukoplakia as an OPMD (80.9%) [11]. However, recognition of erythroplakia as a potentially malignant disorder was comparatively lower, at 73.0% [11]. These findings align with existing literature demonstrating that, while clinicians frequently recognize common conditions such as leukoplakia and major risk factors such as tobacco use, subtle or less common high-risk lesions—particularly erythroplakia—are less readily identified [14,15]. Given that erythroplakia carries a significantly higher rate of dysplasia and malignant transformation compared with leukoplakia, targeted educational reinforcement regarding red mucosal lesions is clinically imperative [13,16].

Although theoretical knowledge was generally favorable, self-reported clinical practices and diagnostic confidence revealed important areas for improvement [11]. Only 54.9% ($n = 118$) of dentists reported performing routine oral mucosal examinations during patient visits, while 33.0% performed them occasionally and 12.1% performed them rarely [11]. Routine visual and tactile examination of the entire oral mucosa is the cornerstone of early OPMD detection [12,17]. The observed rate of routine screening suggests that lack of clinical time, high patient volume, or perceived low pre-test probability may hinder universal mucosal screening in daily dental practice [17,18]. Furthermore, high diagnostic confidence was reported by only 38.1% ($n = 82$) of dentists for recognizing suspicious lesions and by only 34.4% ($n = 74$) for determining when a biopsy is clinically indicated [11]. This gap between theoretical knowledge and clinical self-efficacy is a well-documented phenomenon in oral healthcare, where clinicians may possess the cognitive ability to answer multiple-choice questions correctly on surveys yet feel hesitant when faced with complex, real-world mucosal presentations [18,19].

A key finding of this study is the significant positive association between previous formal oral pathology training and high knowledge levels [11]. Participants who completed formal training demonstrated a significantly higher rate of high knowledge compared with those without formal training (68.1% [77/113] vs. 45.1% [46/102]; Pearson $\chi^2 = 11.63$, $p < 0.001$) [11]. Despite this clear benefit, nearly half of the sample (47.4%, $n = 102$) reported receiving no formal post-qualification training in oral pathology or OPMD management [11]. Interestingly, Libyan dentists reported a significantly lower rate of formal training compared with international respondents (48.0% vs. 63.1%; Pearson $\chi^2 = 4.134$, $p = 0.042$) [11]. Nevertheless, no statistically significant differences were found between Libyan and international dentists regarding leukoplakia identification ($p = 0.598$), high knowledge categorization ($p = 0.650$), or routine screening habits ($p = 0.488$) [11]. This indicates that fundamental undergraduate training provides a comparable baseline across regions, but formal continuing dental education (CDE) is the critical differentiator in sustaining high clinical competence [19,20].

5. Limitations

Several methodological limitations should be considered when interpreting the results of this study [11]. First, the study utilized a non-probability voluntary-response sampling method via online social media platforms, meaning that an exact response rate could not be calculated and that the study may be subject to selection bias, whereby dentists with a pre-existing interest in oral pathology were more likely to participate [11,21]. Second, information regarding clinical examination frequency, decision-making, and diagnostic confidence relied on self-reported data, which is inherently subject to social desirability bias and may not accurately reflect objective diagnostic performance in clinical practice [21,22]. Third, the cross-sectional design establishes statistical associations but precludes causal inferences regarding the long-term impact of training on diagnostic accuracy [11]. Finally, while the total sample size ($N = 215$) provided sufficient statistical power for the primary

comparisons, the international subgroup (n = 65) was smaller than the Libyan group (n = 150), limiting the scope of detailed cross-country subgroup analyses [11].

6.Future Directions

To build upon these findings and address the identified clinical gaps, future research and professional initiatives should focus on several key strategies [11]. Dental regulatory bodies and academic institutions—particularly in Libya—should implement structured, case-based continuing education workshops focusing on high-risk lesion recognition and explicit biopsy indications [11,20]. Furthermore, future studies should complement self-reported surveys with objective evaluations, such as clinical vignette assessments, standardized patient simulations, or retrospective audits of clinical referral patterns [21,23]. Longitudinal studies evaluating the long-term retention of diagnostic confidence following targeted educational interventions are also recommended [20,23]. Finally, investigating the integration of digital clinical decision-support systems and artificial intelligence (AI)-assisted mucosal imaging tools in primary care settings may help bridge practitioner confidence gaps and streamline early referral pathways [24,25].

7.Conclusion

This study demonstrates that dentists generally possess good foundational knowledge regarding OPMDs, suspicious mucosal features, and major oral cancer risk factors [11]. However, notable deficits persist in diagnostic confidence and the performance of routine oral mucosal examinations [11]. Completion of formal oral pathology training was strongly associated with higher knowledge levels, underscoring the vital role of post-qualification education [11]. Institutional support, mandatory continuing education in oral oncology, and standardized clinical screening protocols are necessary to enhance dentists' clinical preparedness, promote routine screening habits, and facilitate early detection of oral potentially malignant disorders [11,20,26].

Compliance with ethical standards

Disclosure of conflict of interest

The authors declare that they have no conflict of interest.

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